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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR     | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|--------------------------|---------------------|------------------|
| 10/049,362  | 02/06/2002  | Thomas Gordon Beck Mason | 30794.61USWO        | 1006             |
| 22462   | 7590        | 10/14/2005               | EXAMINER            |                  |
| GATES & COOPER LLP<br>HOWARD HUGHES CENTER<br>6701 CENTER DRIVE WEST, SUITE 1050<br>LOS ANGELES, CA 90045 |             |                          | NGUYEN, DUNG T      |                  |
|   |             |                          | ART UNIT            | PAPER NUMBER     |
|   |             |                          | 2828                |                  |

DATE MAILED: 10/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

**Office Action Summary**

Application No.

10/049,362

Applicant(s)

MASON ET AL.

Examiner

Dung (Michael) T. Nguyen

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 04 August 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3 and 5-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-3 and 5-8 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The limitation of **the electro-absorption modulator does not include quantum wells** is not disclosed in the specification.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Kinoshita (US5883914).

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With respect to claim 1, Kinoshita shows in Fig. 1 a tunable laser source comprising an active region including MQWs (col.3, l.12-13) on top of a thick, low bandgap (since the claim does not recite how thick and how low bandgap of the waveguide; therefore the examiner assumes that the Kinoshita waveguide has a thickness and a low bandgap as recited) , single common waveguide (col.3, l.15-16), wherein both the waveguide layer and the active region are fabricated between a p-doped region and an n-doped region; and an electro-absorption (EA) modulator integrated into the semiconductor laser (Fig. 1), wherein the EA modulator does not include QWs and instead uses Franz-Keldysh effects for modulation and tuning (col.3, l.12-21), the EA modulator shares the waveguide with the semiconductor laser, and the waveguide layer is designed to provide high index tuning efficiency in the laser and good reverse bias extinction in the modulator (it is inherent that in order to improve for high speed modulation in the tunable laser source the waveguide layer must be designed to provide high index tuning efficiency in the laser and good reverse bias extinction in the modulator).

With respect to claim 7, Kinoshita disclose a blocking junction (col.3, l.27-38).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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Claims 2-3 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kinoshita (US5883914) in view of Coldren (US4896325).

With respect to claims 2-3, Kinoshita (US5883914) disclose all limitations of the claims except for a sampled grating back mirror, a phase control section, a gain section, and a sampled grating front mirror.

Coldren teaches in Fig.8 a sampled grating back mirror 40, a phase control section 32, a gain section 36, and a sampled grating front mirror 42.

For the benefit of continuously lasing tuning in a multi-section tunable laser with differing multi-element mirrors, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Kinoshita (US5883914) what is taught by Coldren.

With respect to claim 8, Coldren discloses in col.8, 1.5-10 the laser is tuned by adjustment of control current for the mirrors.

For the benefit of providing a diode laser in the selective tuning capable over an extended wavelength (col.8, 1.40-42), it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Kinoshita (US5883914) what is taught by Coldren.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kinoshita (US5883914)) in view of Berger et al. (US5208821).

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Kinoshita (US5883914) disclose all limitations of the claim except for the waveguide layer is a buried heterostructure waveguide that includes multiple quantum wells (MQW).

Berger teach the waveguide layer is a buried heterostructure waveguide that includes multiple quantum wells (MQW) 26 (col.1, 1.11-21).

For the benefit of the substitution of an unreliable ridge waveguide lasers with MQW that are weakly index-guided and mode-unstable (col.1, 1.14-21), it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Kinoshita (US5883914) what is taught by Berger.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kinoshita (US5883914) in view of Yap (US5138626).

Kinoshita (US5883914) disclose all limitations of the claim except for the waveguide layer is a ridge waveguide that includes multiple quantum wells (MQW).

Yap teaches the waveguide layer is a ridge waveguide that includes multiple quantum wells (MQW) (col.1, 1.51-52).

For the benefit of a laser device producing a reliable performance and yielding a simple fabrication (col.1, 1.63-65), it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Kinoshita (US5883914) what is taught by Yap.

### *Conclusion*

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

### **Communication Information**

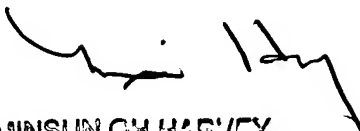
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dung (Michael) T Nguyen whose telephone number is (571) 272-1949. The examiner can normally be reached on 8:30 - 17:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Min Harvey can be reached on (571) 272-1835. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-3329.

Michael Dung Nguyen



**MINSUN OH HARVEY  
PRIMARY EXAMINER**